

CITY OF CHICAGO GUIDE TO

Land-Based

Invasive Plants



Table of Contents

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Guide to Land-Based Invasive Plants	1
Regulated Land-Based Invasive Plants	2
Advisory Group	4
Biodiversity	4
Common Land-Based Invasive Plants	5
Avenues of Spread	8
Climate Change	8
Prevent & Control Invasive Species	11
Additional Resources	12



Guide to Invasive Plants

Chicago's natural areas comprise less than 3% (3,800 acres) of the entire city area, but represent all the basic types of northeastern Illinois ecosystems. Our wetlands, forests, savannas, and prairies provide habitat for more than 400 species of mammals, birds, reptiles, amphibians, and fish. Today, these important natural areas and the wildlife that depend on them are threatened by the spread of invasive plants. Invasive plants alter the local ecology and out-compete native species for resources. Thus, the City of Chicago, sister agencies, homeowners, and land managers must work together to reduce the threat of invasive plants in our region.

Native

A native species is one that occurs naturally in a particular place without human intervention. Species native to North America are generally recognized as those occurring on the continent prior to European settlement.

Non-native

An organism is considered non-native when it has been introduced by humans to a location outside its native or natural range.

Invasive

An invasive species is one that is usually non-native to an ecosystem and whose introduction causes or is likely to cause harm to the economy, the environment or human health, for example, by:

- **out-competing native species for resources and pollinators**
- **altering the ecology of natural areas**
- **weakening or damaging equipment and infrastructure; or**
- **spreading pathogens and parasites**

Invasive species reproduce rapidly, spread over large areas of land and have few, if any, natural controls, such as predators or diseases, to keep them in check.

Invasive species have been introduced to the region through a number of different pathways. Some non-native species have been intentionally introduced for beneficial purposes, like erosion control, or for their ornamental value and later were discovered to be invasive. Others are introduced accidentally in agricultural crops and seed trade.

Chicago's Invasive Species Ordinance

The City of Chicago's Invasive Species Ordinance, which passed City Council in 2007, makes it unlawful to possess certain invasive plant and animal species on the regulated list. The initial list consisted of aquatic invasive species. In 2009, the regulated list was updated to include the land-based invasive plants in this brochure. While there are many more invasive species that could cause harm in the region, the current list prioritizes species that are in trade, not yet prevalent in the city, and pose the greatest threat to our natural areas. For more information, visit www.cityofchicago.org/invasivespecies.

Regulated Invasive Plants

These species are illegal to import, sell, transport, own, keep, release, introduce, or otherwise possess in the City of Chicago, as of March 2009.* Non-invasive landscape alternatives are listed below each invasive species.



1. Chocolate Vine *Akebia quinata*

Alternative:

Virginia Creeper *Parthenocissus quinquefolia* ●



2. Elegans Porcelain Berry Vine

Ampelopsis brevipedunculata

Alternatives:

Virgin's Bower Clematis *Clematis virginiana* ●

Peppervine *Ampelopsis arborea* ●

Virginia Creeper *Parthenocissus quinquefolia* ●



3. Wild Chervil *Anthriscus sylvestris*

Alternatives:

Goatsbeard *Aruncus dioicus* ●

Cilantro *Coriandrum sativum* ●



4. Oriental Bittersweet *Celastrus orbiculatus*

Alternatives:

American Bittersweet *Celastrus scandens* ●

Dutchman's Pipe *Aristolochia durior* ●

Climbing Hydrangea Vine *Hydrangea anomala petiolaris* ●



5. Japanese Hops *Humulus japonicus*

Alternatives:

Common Hops *Humulus lupulus* ●

River Grape *Vitis riparia* ●



6. Lyme Grass *Leymus arenarius*

Alternatives:

June Grass *Koeleria macrantha* ●

Little Bluestem *Schizachyrium scoparium* ●

Native Sedges *Carex* spp. ●



7. Privet *Ligustrum* spp.

Alternatives:

Black Haw *Viburnum prunifolium* ●

Devilwood *Osmanthus americanus* ●

Cotoneaster *Cotoneaster acutifolius* ●

Legend:

● Native to the United States

● Non-native to the United States

* Exemptions will be made on a case by case basis for the horticultural selection of plants that have been proven by the scientific community (i.e. in a scientific publication) to be functionally sterile.

Regulated Invasive Plants



8. Amur Silver Grass

Miscanthus sacchariflorus

Alternatives:

Prairie Dropseed *Sporobolus heterolepis* ●

Variegated Prairie Cord Grass

Spartina pectinata 'Aureomarginata' ●

Big Bluestem *Andropogon gerrardi* ●



9. Princess Tree *Paulownia tomentosa*

Alternatives:

Northern Catalpa *Catalpa speciosa* ●

Kentucky Coffeetree *Gymnocladus dioica* ●



10. Amur Corktree *Phellodendron amurense*

Alternatives:

Red Maple *Acer rubrum* ●

White Oak *Quercus alba* ●

Littleleaf Linden *Tilia cordata* ●



11. Japanese Corktree

Phellodendron japonica

Alternatives:

Tatarian Maple *Acer tataricum* ●

Village Green *Zelkova Zelkova serrata*

'Village Green' ●

Kentucky Coffeetree *Gymnocladus dioica* ●



12. Japanese Knotweed

Polygonum cuspidatum

Alternatives:

Goat's Beard *Aruncus dioicus* ●

Solomon's Seal *Polygonatum cannaliculatum* ●

Fragrant Sumac *Rhus aromatica* ●



13. Sawtooth Oak

Quercus acutissima Carruthers

Alternatives:

Shingle Oak *Quercus imbricaria* ●

Chinkapin Oak *Quercus muehlenbergii* ●



14. Lesser Celandine *Ranunculus ficaria*

Alternatives:

Green-and-Gold *Chrysogonum virginianum* ●

Marsh Marigold *Caltha palustris* ●

Advisory Group

Both lists result from numerous discussions between the City of Chicago and an advisory group composed of experts in the landscaping industry and field of terrestrial (land-based) ecology, including:

- Chicago Botanic Garden
- Chicago Bureau of Forestry
- Chicago Park District
- Cook & Lake County Forest Preserve Districts
- Illinois Department of Natural Resources
- Illinois Landscape Contractors Association
- Illinois Natural History Survey
- The Nature Conservancy
- U.S. Department of Agriculture
- U.S. Fish and Wildlife Service
- University of Notre Dame

Biodiversity

Biodiversity, or biological diversity, refers to the variety of life at all levels, from genes to ecosystems. It is often used as a measure of ecological health. The loss of biodiversity makes ecosystems more vulnerable to stress and disturbances, less resilient, and less able to supply humans with needed services. Today, the world's biodiversity is threatened at every level, as apparent in the extreme rate of species loss which is 100 times higher than natural (or background) extinction rates.

Main Causes of Biodiversity Loss:

1. Habitat Destruction (Loss and Degradation)
2. Introduction of Invasive Species
3. Overexploitation
4. Climate Change
5. Other Factors (Pollution and Disease)

42% of species listed under the U.S. Endangered Species Act as threatened or endangered are at risk primarily because of invasive species.

Common Invasive Plants

These species are discouraged in the City of Chicago. They are not regulated because they are already prevalent in the region, not commonly sold, or are regulated by another governmental agency. Non-invasive landscape alternatives are listed below each invasive species.



1. Norway Maple *Acer platanoides*

Alternatives:

Marmo Maple *Acer freemanii* 'Marmo' ●

Red Maple *Acer rubrum* ●

Miyabe Maple *Acer miyabei* ●



2. Tree of Heaven *Ailanthus altissima*

Not actively planted. Removal is recommended.



3. Garlic Mustard *Alliaria petiolata*

Not actively planted. Removal is recommended.



4. Giant Ragweed *Ambrosia trifida* L. ILNWL

Not actively planted. Removal is recommended.



5. Common Ragweed *Ambrosia artemisiifolia* L.

Not actively planted. Removal is recommended. ILNWL



6. Japanese Barberry *Berberis thunbergii*

Alternatives:

Ninebark *Physocarpus opulifolius* ●

Clove Currant *Ribes odoratum* ●

Boxwood *Buxus* spp. ●



7. Musk Thistle *Carduus nutans* ILNWL

Not actively planted. Removal is recommended.



8. Ox-eye Daisy

Chrysanthemum leucanthemum

Alternatives:

Virginia Mountain Mint *Pycnanthemum virginianum* ●

Wild Quinine *Parthenium integrifolium* ●

Mammoth Mums *Chrysanthemum* 'Mammoth Mums' ●



9. Canada Thistle *Cirsium arvense* ILNWL

Not actively planted. Removal is recommended.

Common Invasive Plants



10. Poison Hemlock *Conium maculatum*
Not actively planted. Removal is recommended.



11. Crown Vetch *Coronilla varia*
Alternatives:
Whorled Milkweed *Asclepias verticillata* ●
Spreading Dogbane
Apocynum androsaemifolium ●
Barrenwort *Epimedium spp.* ●



12. Cut-leaved Teasel *Dipsacus laciniatus*
Not actively planted. Removal is recommended.



13. Common Teasel *Dipsacus sylvestris*
Not actively planted. Removal is recommended.



14. Chinese Yam, Air Potato
Dioscorea oppositifolia
No medicinal alternative exists.



15. Russian Olive *Elaeagnus angustifolia L.*
Alternatives:
Buffaloberry *Shepherdia argentea* ●
Silky Willow *Salix sericea* ●
Sweetbay Magnolia *Magnolia virginiana* ●



16. Autumn Olive *Elaeagnus umbellata*
Alternatives:
Wax Myrtle *Morella cerifera* ●
Redosier Dogwood cultivars *Cornus sericea* ●



17. Burning Bush *Euonymus alata*
Alternatives:
Black Viburnum *Viburnum prunifolium* ●
Shining sumac *Rhus copallinum* ●
Cotoneaster *Cotoneaster acutifolius* ●



18. Wintercreeper *Euonymus fortunei*
Alternatives:
Wild Ginger *Asarum Canadensis* ●
Native Sedges *Carex spp.* ●
Creeping Lily Turf *Liriope spp.* ●

Common Invasive Plants



19. Leafy Spurge *Euphorbia esula*
Not actively planted. Removal is recommended.



20. Baby's Breath *Gypsophila muralis*
Alternatives:
Boltonia *Boltonia asteroides* ●
Flowering Spurge *Euphorbia corollata* ●
Lesser Calamintha *Calamintha nepeta* ●



21. Giant Hogweed
Heracleum mantegazzianum FNWL
Not actively planted. Removal is recommended.



22. Common Daylily *Hemerocallis fulva*
Alternatives:
Hemerocallis cultivars *Hemerocallis* spp. ●
Native Rudbeckia cultivars *Rudbeckia* spp. ●



23. Dame's Rocket *Hesperis matronalis*
Alternatives:
Phlox *Phlox* spp. ●
Blazing Star *Liatris* spp. ●
Checkerbloom *Sidalcea malviflora* ●



24. Pale Yellow Iris *Iris pseudacorus*
Alternatives:
Copper Iris *Iris fulva* 'Lois Yellow' ●
Blue Flag Iris *Iris virginica* var. *shrevii* ●



25. All Exotic Honeysuckles
Lonicera spp. ILEWA
Alternatives:
Red Honeysuckle *Lonicera dioica* ●
Twinberry *Lonicera involucrata* ●
Michigan Holly *Ilex verticillata* ●



26. Bird's Foot Trefoil *Lotus corniculatus*
Alternatives:
Long-Bracted Wild Indigo *Baptisia bracteata* ●
Deer Vetch *Lotus rigidus* ●

Avenues of Spread

Invasive species spread in many ways, including:

- Ornamental species in lawns and gardens
- Shoes, tire treads or boats
- Exotic pet and plant trade
- Wind, fire, water or animals
- Livestock and wildlife
- Agricultural crops and seed trade
- Poor landscape management practices

Today, in the United States, invasive land-based plants have invaded over 100 million acres. Every year these plants spread across 3 million additional acres, gaining an area twice the size of Delaware.

Climate Change

Chicago's climate has already begun to shift and will continue to do so in the face of global climate change. Since 1980, the average temperature has risen by about 2.6°F. Trees and plants flower earlier in the spring and frosts occur later in the fall. There have been several major heat waves in recent years, and the amount of winter ice on Lake Michigan is decreasing. Heavy rainstorms are also increasing in frequency.

As our climate shifts, so do our delicate ecosystems. Many native species will go extinct or migrate to more suitable land, and many non-native species will move in.

By regulating these species and raising awareness about their threat, the City of Chicago is taking aggressive, preventative actions today to protect our native ecosystems and limit the spread of harmful invasive species.

www.chicagoclimateaction.org

Common Invasive Plants



27. Purple Loosestrife
Lythrum salicaria ILEWA

Alternatives:

Swamp Milkweed *Asclepias incarnata* ●

Prairie Ironweed *Vernonia fasciculata* ●

Cardinal Flower *Lobelia cardinalis* ●



28. Japanese Stilt Grass
Microstegium vimineum

Not actively planted. Removal is recommended.



29. Maiden Grass *Miscanthus sinensis*

Alternatives:

Switch Grass *Panicum virgatum* cvs. ●

Little Bluestem *Schizachyrium scoparium* ●

Indian Grass *Sorghastrum nutans* ●



30. White Mulberry *Morus alba* L.

Alternatives:

Native Hawthorn *Crataegus* spp. ●

Black Cherry *Prunus serotina* ●

Honey Locust *Gleditsia tracanthus inermis* ●



31. Reed Canary Grass *Phalaris arundinacea*

Alternative:

Variegated Prairie Cord Grass

Spartina pectinata 'Aureomarginata' ●



32. Common Reed *Phragmites australis*

Not actively planted. Removal is recommended.



33. Mile-a-minute Vine

Polygonum perfoliatum

Not actively planted. Removal is recommended.



34. Kudzu *Pueraria lobata* ILNWL ILEWA

Not actively planted. Removal is recommended.



35. Callery Pear *Pyrus calleryana*

Alternatives:

Fringe Tree *Chionanthus virginicus* ●

Green Hawthorn *Crataegus viridis* ●

Nannyberry *Viburnum lentago* ●

Common Invasive Plants



36. All Exotic Buckthorns

Rhamnus spp. **ILEWA**

Not actively planted. Removal is recommended.



37. Multiflora Rose *Rosa multiflora* **ILEWA**

Not actively planted. Removal is recommended.



38. Perennial Sowthistle

Sonchus arvensis **ILNWL**

Not actively planted. Removal is recommended.



39. Johnsongrass *Sorghum spp.* **ILNWL**

Not actively planted. Removal is recommended.



40. Siberian Elm *Ulmus pumila* L.

Alternatives:

Dutch Elm Disease Resistant American Elm

cultivars *Ulmus Americana* ●

Scarlet Honeysuckles *Lonicera sempervirens* ●



41. European Cranberry Bush

Viburnum opulus

Alternatives:

Red Wing Viburnum *Viburnum trilobum* 'Red Wing' ●

Scarlet Elder *Sambucus racemosa* ●



42. Black Swallow-wort

Vincetoxicum nigrum

Alternative:

Virgin's Bower Clematis *Clematis virginiana* ●



43. Pale Swallow-wort

Vincetoxicum rossicum

Alternative:

Peppervine *Ampelopsis arborea* ●

Legend:

● Native to the United States

● Non-native to the United States

FNWL Regulated under the Federal Noxious Weed List

ILNWL Regulated under the Illinois Noxious Weed Law

ILEWA Regulated under the Illinois Exotic Weed Act

Prevent & Control Invasive Species

Prevent

With your help, we can spot and stop the spread of invasive species in our back yards and natural areas. Here are a few ways you can prevent the spread of invasives:

1. Use native species wherever possible. Avoid buying and planting species that are listed here.
2. Leave native trees and plants; natural landscapes offer the best defense.
3. Remove plant seeds and fragments from clothing, hiking boots, and equipment after enjoying outdoor activities.
4. Buy firewood within a 50-mile radius of your campsite and burn it all during your trip, visit www.dontmovefirewood.org.
5. Be on the look out for invasive species and respond aggressively to rid your backyard of the new species; report sightings at www.mipn.org/EDRRContacts.html.

Control

An organism is considered non-native when it has been introduced by humans. Many invasive species are already invading our private and public lands. To control the existing populations of these species, residents can:

1. Learn to identify common invasive plants in your backyard and in the natural areas of your neighborhood.
2. Remove common invasive plants from your property before they set seed. Dispose of invasive plants in a way to ensure they won't spread, visit www.centerforplantconservation.org/invasives/codesN.html.
3. Educate friends and neighbors about the problems caused by invasive species.
4. Volunteer to help the Chicago Park District, Forest Preserve District of Cook County, Friends of the Chicago River, Friends of the Forest Preserves, North Park Village Nature Center, and other organizations in your community that organize invasive species control days.

Additional Resources

Chicago Department of Business Affairs & Consumer Protection:
Invasive Species
www.cityofchicago.org/invasivespecies

Chicago Botanic Garden
www.chicagobotanic.org/research/invasive

Midwest Invasive Plant Network
www.mipn.org

Illinois Nature Preserves Commission: Vegetation Management Manual
www.inhs.uiuc.edu/chf/outreach/VMG/VMG.html

The Nature Conservancy's Global Invasive Species Team
<http://tncinvasives.ucdavis.edu>

United States Department of Agriculture: Plants Database
www.plants.usda.gov/index.html

United States Department of Agriculture:
National Invasive Species Information Center
www.invasivespeciesinfo.gov/unitedstates/il.shtml

United States Fish & Wildlife Service: Invasive Species
www.fws.gov/invasives/what-you-can-do.html

Plants of the Chicago Region. F. Swink and G. Wilhelm. Indiana Academy of Science: Indianapolis, IN. 1994.

Native Alternatives to Invasive Plants. C. Colston Burrell. Brooklyn Botanic Garden: Brooklyn, NY. 2006.

Invasive Plants of the Upper Midwest:
An Illustrated Guide to Their Identification
and Control. E. Czarapata. University of Wisconsin Press: Madison, WI. 2005.

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Common Invasive Plants

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